Artistry in Sound

ONKYO

TX-84/84M
TX-82/82M

Quartz Synthesized Tuner Amplifier

Instruction Manual

● *T*hank you for purchasing the ONKYO TX-84/84M, TX-82/82M Tuner-Amplifier. ● Please read this manual thoroughly before connecting up your new tuner-amplifier, and turning it on. ● Following the instructions in this manual will enable you to obtain the utmost listening enjoyment from your new TX-84/84M, TX-82/82M. ● Please keep the manual for later reference.

CONTENTS

FEATURES

● **7 input terminals (even video inputs)**
You can connect your TX-84/82 to various audio or video equipment, including a compact disc player.

● **Discrete Output Stage**
The Discrete Output Stage ensures "clean" drive into a low impedance load, and a minimum distortion sound output is rendered by the linear switching circuit. The Onkyo design philosophy for high quality amplifiers is incorporated in the TX-84/82 through the careful selection of high quality parts.

● **The Heart of your AV System**
You can connect two video tape decks, to duplicate video or audio tapes. The sound quality of monaural VTR signals can be enhanced and improved by the simulated stereo function. The selective tone control has its own volume adjustment, putting extra convenience under your control. The TX-84's dynamic bass expander (DBE) and its stereo image expander (SIE) give you the feeling of a live performance.

● **Wireless Remote Control Included**
The infrared wireless remote control unit enables, from a distance, operations such as volume adjustment, power ON/OFF, input selection, tuner preset station UP/DOWN, and audio muting. It can also work with some ONKYO cassette tapedecks and CD players (also turntables with TX-84).
* The TX-84M and TX-82M are supplied with a universal remote control, RC-AV1M, which provides many convenient functions.

● **Receiving section**
* The TX-84/82 is equipped with Onkyo's unique APR System that automatically controls the RF sensitivity (DX/local), auto hi-blend, mode function (auto/mono) and noise reduction (on/off, TX-84) according to the signal quality. Consequently, optimum reception is assured at all times.
* The memory preset stores all of your 16 favorite random AM/FM stations for the expansion of the number of broadcasts.

● **Easy, versatile operation**
* The most frequently used controls are feather-touch sensitive to avoid signal inteference.
* All your favorite stations are retained in memory for a few weeks after the unit has been disconnected.
* You can use two pairs of speakers at the same time.

● The basic features of this tuner amplifier were designed to provide a "true to life" impression in your home. ("The TX-84/82 gives you solid quality from top to bottom.")

CAUTION

"TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL."

⚠ | **CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN | ⚠

⚠ ● The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

⚠ ● The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

"WARNING"

"TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE."

● For models having power cords with a polarized plug.

CAUTION: TO PREVENT ELECTRIC SHOCK.
DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

● Sur les modèles dont la fiche est polarisée.

ATTENTION: POUR PRÉVENIR LES CHOCS ÉLECTRIQUES NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR. UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

● The serial number is written on the rear panel of this unit. Copy the serial number and model number onto your warranty card and keep it in a safe place.

IMPORTANT SAFEGUARDS

1. **Read Instructions** – All the safety and operating instructions should be read before the appliance is operated.

2. **Retain Instructions** – The safety and operating instructions should be retained for future reference.

3. **Heed Warnings** – All warnings on the appliance and in the operating instructions should be adhered to.

4. **Follow Instructions** – All operating and use instructions should be followed.

5. **Water and Moisture** - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.

6. **Carts and Stands** - The appliance should be used only with a cart or stand that is recommended by the manufacturer.

7. **Wall or Ceiling Mounting** -- The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.

8. **Ventilation** - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9. **Heat** - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

10. **Power Sources** - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. **Grounding and Polarization** - The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.

12. **Power-Cord Protection** - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. **Cleaning** - The appliance should be cleaned only as recommended by the manufacturer.

14. **Power Lines** - An outdoor antenna should be located away from power lines.

15. **Outdoor Antenna Grounding** - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of the antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure 65.1.

FIGURE 65.1:
EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 – "RADIO AND TELEVISION EQUIPMENT"
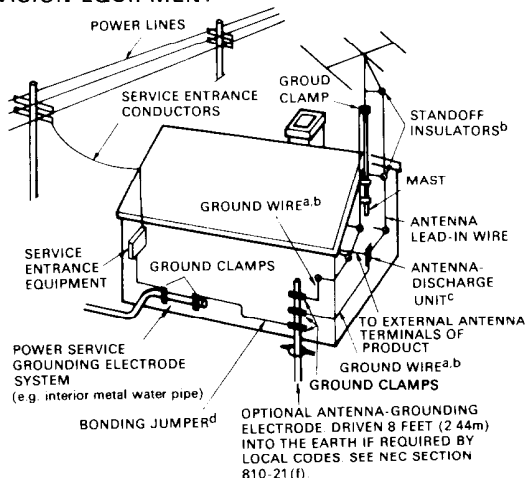
[a] Use No. 10 AWG (5.3 mm^2) copper, No. 8 AWG (8.4 mm^2) aluminum, No. 17 AWG (1.0 mm^2) copper-clad steel or bronze wire, or larger, as a ground wire.

[b] Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4—6 feet (1.22—1.82 m) apart.

[c] Mount antenna discharge unit as close as possible to where lead-in enters house.

[d] Use jumper wire not smaller than No. 6 AWG (13.3 mm^2) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

16. **Nonuse Periods** - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

17. **Object and Liquid Entry** - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

18. **Damage Requiring Service** - The appliance should be serviced by qualified service personnel when:
   A. The power-supply cord or the plug has been damaged; or
   B. Objects have fallen, or liquid has been spilled into the appliance; or
   C. The appliance has been exposed to rain; or
   D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
   E. The appliance has been dropped or the enclosure damaged.

19. **Servicing** – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

● The tuner amplifiers are provided with the following remote control transmitters:

   TX-84........................ RC-84S
   TX-82........................ RC-82S
   TX-84M/82M.......... RC-AV1M

● TX-84M and TX-82M are basically the same tuner amplifiers supplied with different remote control transmitters.

● For the RC-AV1M transmitter, a seperate instruction manual is included.

PRECAUTIONS

1. **Warranty Card**
   The serial number is written on the rear panel of this unit. Copy the serial number and model number onto your warranty card and keep it in a safe place.

2. **Recording Copyright**
   Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.

3. **AC Fuse**
   The fuse is located inside the chassis and is not user serviceable. If power does not come on, contact your Onkyo dealer.

4. **Care**
   From time to time you should wipe off the front and rear panels and the cabinet with a silicon or other soft cloth. For heavier dirt, dampen a soft cloth in a weak solution of mild detergent and water, wring it out dry, and wipe off the dirt. Following this, dry immediately with a clean cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since these could damage the finish or remove the panel lettering.

5. **Power**
   WARNING
   BEFORE TURNING ON POWER FOR THE FIRST TIME, READ THE FOLLOWING SECTION CAREFULLY.

● Some models are designed for use only with the power supply voltage of the region where they are sold.
   USA & Canadian models: AC120V, 60Hz
   Worldwide models: AC120V, 60Hz/
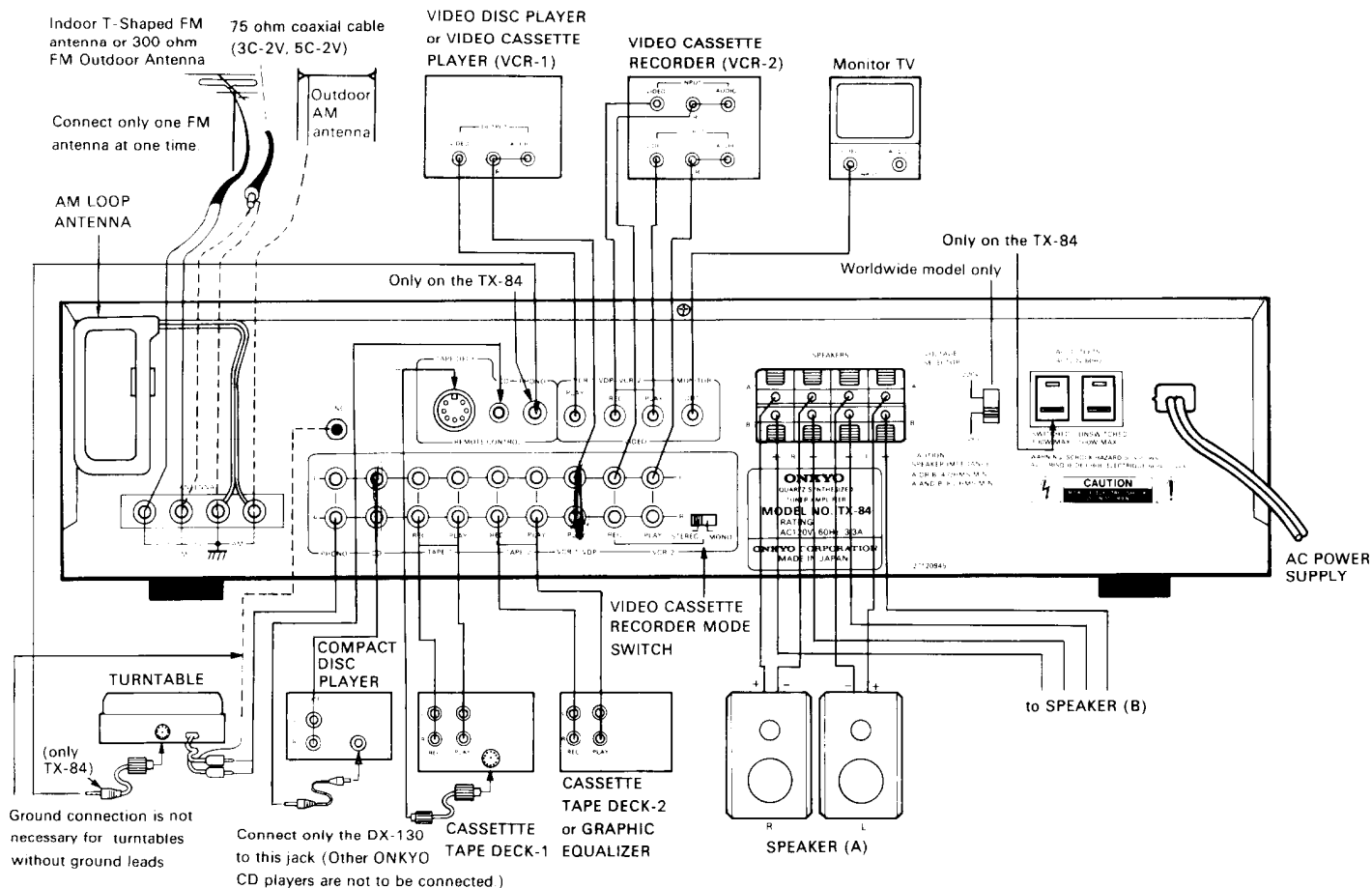   220V, 50Hz switchable.

SYSTEM CONNECTIONS

General
Switch the main power switch off before performing connections. Also be sure to perform left and right channel connections properly.

NOTE:

Remote control operation is not possible when only the remote control cord is connected. Remote control cord and pin cord must be connected.

Indoor T-Shaped FM antenna or 300 ohm FM Outdoor Antenna

75 ohm coaxial cable (3C-2V, 5C-2V)

Outdoor AM antenna

Connect only one FM antenna at one time

VIDEO DISC PLAYER or VIDEO CASSETTE PLAYER (VCR-1)

VIDEO CASSETTE RECORDER (VCR-2)

Monitor TV

AM LOOP ANTENNA

Only on the TX-84

Only on the TX-84

Worldwide model only

VIDEO CASSETTE RECORDER MODE SWITCH

TURNTABLE

(only TX-84)

Ground connection is not necessary for turntables without ground leads

COMPACT DISC PLAYER

Connect only the DX-130 to this jack (Other ONKYO CD players are not to be connected.)

CASSETTTE TAPE DECK-1

CASSETTE TAPE DECK-2 or GRAPHIC EQUALIZER

to SPEAKER (B)

SPEAKER (A)

R   L

AC POWER SUPPLY

AC Outlets
- **UNSWITCHED:**
  This outlet is not switched on and off by the Power switch on the front panel. Capacity is 100 watts.
- **SWITCHED: (TX-84 only)**
  This outlet is switched on and off by the Power switch on the front panel and remote control transmitter. Capacity is 100 watt.

FM Antennas
Use the T-shaped antenna if you live in an area where signal strength of FM broadcasts is high. Connect the antenna to the FM 300 ohms terminals and place the antenna on a wall or other surface in the position in which reception is best. If signal strength is low in your area, use a multi-element FM outdoor antenna and connect to this unit using 75 ohm coaxial cable because this type of cable is more resistant to interference than 300 ohm cables. Consult your Onkyo dealer about the right type of antenna for your area.
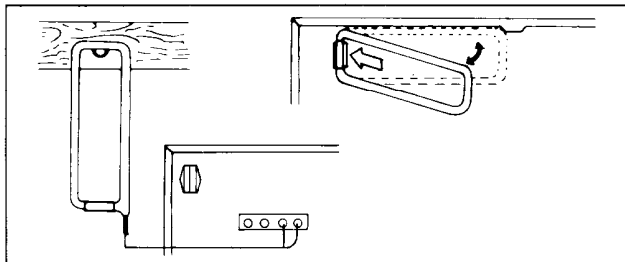
NOTE:

Do not use the same antenna for both FM and TV (or VCR) reception since the FM and TV (or VCR) signals can interfere with each other. If you must use a common FM/TV (or VCR) antenna, use a directional linkage type splitter.

Directional linkage type splitter

To receiver   To TV (or VCR)
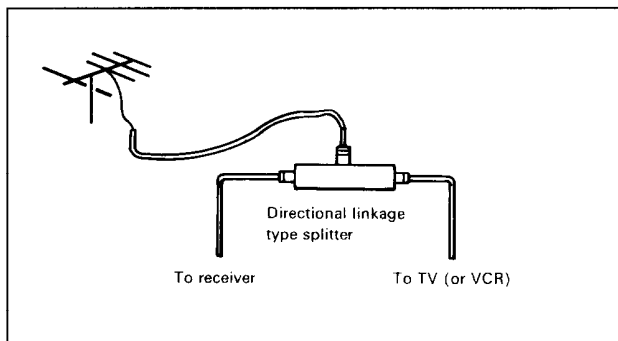
AM Antenna

An AM loop antenna is included in the installation in-
structions bag. Insert it into the holder on the rear panel.
Swing one end of the antenna away from the rear panel
to the position that gives the best reception. If reception
is still unsatisfactory, completely remove the loop antenna
from the rear panel and hang it on a wall or other surface
in the position that gives the best reception. Be sure the
antenna is not near speakers, power cords, television sets,
VCRs, and motorized appliances. When using an outdoor
AM antenna, do not remove the loop antenna. Connect
both antennas to the AM antenna terminals.

NOTE:

AM reception is easily affected by television sets and
VCRs. Therefore, AM reception may be poor if this unit
is placed too closed to a TV or VCR.

Speaker Connections

When connecting speakers, proper polarity is important.
Always connect the (+) terminal (red) on the amplifier to
the (+) terminal on the speaker and the (−) terminal (black)
on the amplifier to the (−) terminal on the speaker.

● Speaker load impedance is very important. Only speaker
  systems rated at 8 ohms or more should be used with
  this unit. If only one pair of speakers is used, the load
  impedance must be at least 4 ohms.
● Do not connect a single speaker in parallel to the right
  and left channel outputs.
● Use speaker cables that have a low impedance and that
  are as short as possible.
● Attach speaker cables to the rear panel Speaker terminals
  with care, being sure that connections are made firmly
  and that there is no possibility of a short circuit occurring.

Turntable Connections

Connect the output leads of the turntable to the PHONO
jacks.
Be sure to connect the ground (earth) lead wire from the
turntable to the ground terminal (GND). Lack of proper
ground connection will cause hum. Turntables not pro-
vided with GND wires do not need to be connected.
1. Place the turntable on a firm shelf or deck free from
   vibrations (especially those generated by the speaker
   system). If the turntable is permitted to pick up such
   unwanted vibrations, not only will the performance of
   the unit drop, but distortion in the bass frequencies and
   howling in the speakers may also occur.
2. Check the turntable instruction manual for any other
   precautions.
3. The loud noises that occur when connecting and dis-
   connecting the turntable leads, replacing the cartridge
   or lowering the tonearm could damage the speakers.
   Always turn the power switch off before making con-
   nections.

4. If a compatible Onkyo remote control turntable is used
   with this unit, the TX-84 remote controller can also be
   used to start and stop turntable operation. In this case,
   connect the supplied phono DIN cord plug to the DIN
   type remote control jack on the turntable and the
   turntable remote control jack on the rear panel of TX-84.
5. The turntable can be remotely controlled only with the
   TX-84.

| Compatible Onkyo Remote Control Turntables	
CP-1057F	CP-1044F
CP-1055F II	CP-1055F
CP-1046F	USA model (AC120V) only

Compact Disc Player or Other Component

Connect the output leads of the CD player or an additional
audio component to the CD jacks. An Onkyo CD player
with remote control can be operated by the TX-84/82's
remote control transmitter. For more details, refer to your
CD player instruction manual.

| Onkyo CD players that can be operated by the remote control transmitter:		
DX-200	DX-330	* DX-130
DX-320	DX-230	
DX-220		

* Connect the 2.5mm plug cord (that is provided for re-
  mote control operation of the DX-130) to the CD remote
  cotrol jack on the rear panel of TX-84/82 and DX-130.

2.5mm plug cord
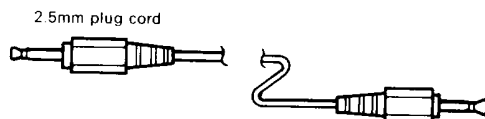
Tape Deck and Graphic Equalizer

1. This unit has facilities for two tape decks. Only the tape
   deck connected to the TAPE-1 jacks. If you have two
   decks, connect the one to the TAPE-1 jacks and the
   other deck to the TAPE-2 jacks.
2. Connect the output leads of the tape decks to the
   TAPE-1 and TAPE-2 PLAY jacks. Connect the input
   leads of the tape decks to the TAPE-1 and TAPE-2 REC
   jacks of the unit. For more details, refer to your tape
   deck instruction manual.
3. To connect a graphic equalizer too, use the TAPE-2 jacks
   and connect the second tape deck to the tape jacks of
   the equalizer.

**To connect a graphic equalizer and second tape deck to
the TAPE-2 jacks.**
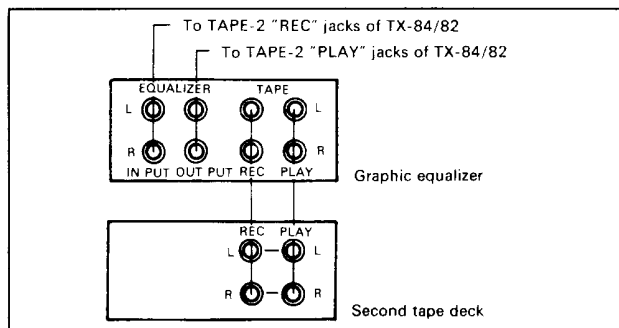
4. If tape deck 1 is remote control compatible, connect the supplied tape deck DIN cord plug to the DIN type remote control jack on the Tape Deck and the tape deck remote control DIN jack on the rear panel of TX-84/82.

Compatible Onkyo Remote Control Cassette Decks		
TA-2028	TA-2058 (3-head)	TA-2140
TA-2090 (3-head)	TA-W460	TA-R240
TA-2048 (3-head)	TA-R260	TA-2130

Video Disc Player (or Video Cassette Player)
Connect the "VIDEO" output of the video disc player to the TX-84/82 VCR-1/VDP "PLAY" jack and the "AUDIO" output to the VCR-1/VDP PLAY (AUDIO) jack. When connecting a monaural VCR to the VCR-1/VDP jack, connect the VCR's audio output to either the L or R VCR-1/VDP "PLAY" audio input jack of the TX-84/82. Then set the TX-84/82's mode switch (MODE) [12] to "MONO". If this is not done, sound will be output from only one speaker, the right or the left. The VCR-1/VDP jack is only for playback, there is no REC jack. For more details, refer to the video disc player instruction manual.

Video Cassette Recorder
1. Connect the "VIDEO" output of VCR to the rear panel VCR-2 PLAY jacks and the "VIDEO" input of VCR to the rear panel VCR-2 REC jacks. Then connect the "AUDIO" output of VCR to the VCR-2 L and R PLAY (AUDIO) jacks. Finally, connect the "AUDIO" input of VCR to the VCR-2 L and R REC (AUDIO) jacks.
2. When using a monaural VCR (having a single audio input and output), set the corresponding VCR mode switch "VCR-2 MODE" on the rear panel to MONO and use either the R or L audio jack. If the switch is in the STEREO position, sound will be heard from only the right or left speaker system.
3. When using a playback-only VCR, only the output connections need to be performed.
4. Do not use the same antenna for FM and VCR (TV) reception. (See the note in the antenna section.)
5. For more details, refer to the VCR instruction manual.

Monitor TV
1. Connect the TV VIDEO input to the TX-84/82 MONITOR "OUT" jack. There is no need to perform an audio connection since sound will be sent directly from the TX-84/82 to the speaker systems.
2. The TX-84/82 does not have an RF converter. Therefore, it can be used with only a monitor TV equipped with a video input jack.
3. Since the television set, tuner (FM/AM) section of this unit can cause interference that may disrupt sound and/or picture quality, the TV and TX-84/82 and their respective connection cables should be placed as far apart as possible. The use of a common TV/FM antenna is not recommended (see antenna section).
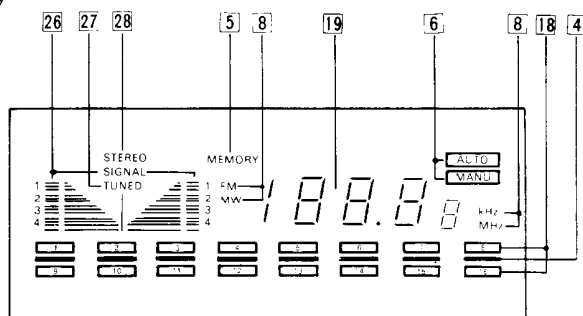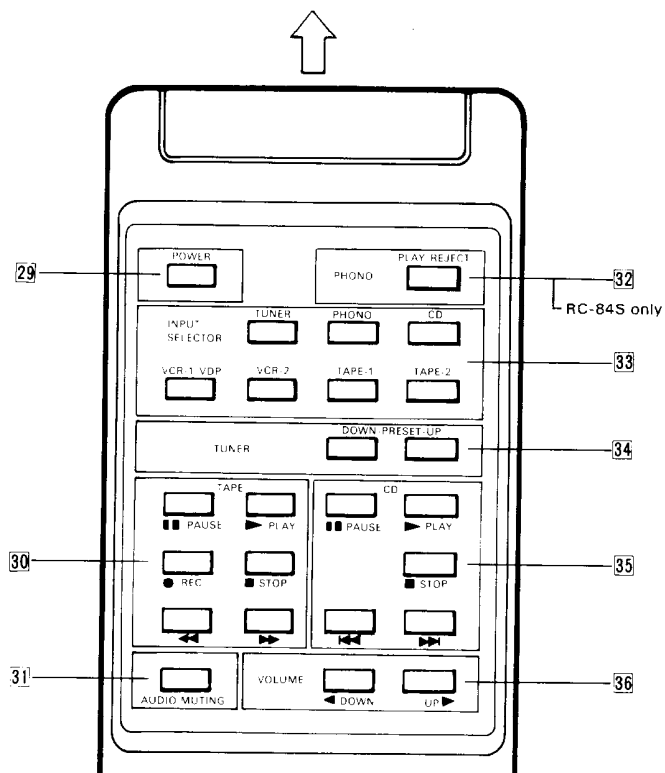
FRONT PANEL FACILITIES

Display
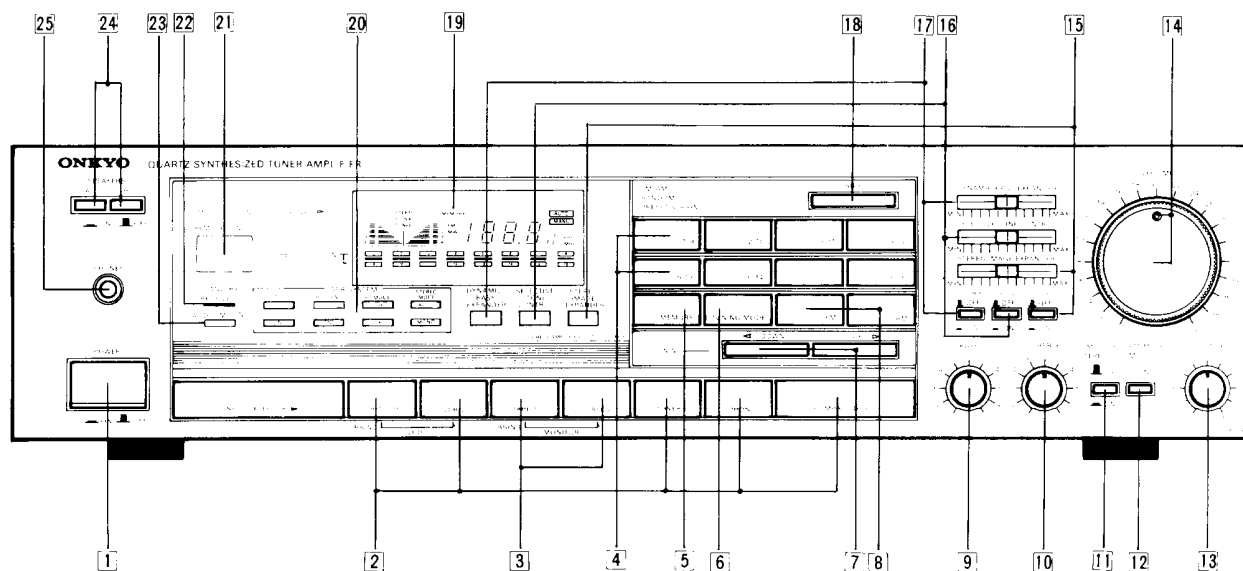
NOTE:
● The front panel design for the TX-84 and TX-82 differs slightly according to the areas for which each unit was manufactured. For example, some units have silver panels and others are black.
● The features and specifications for the TX-84 and TX-82 are slightly different. Read this manual carefully to operate the model you have purchased correctly.

5 Memory Button and Indicator

Press this button to place a station in the memory using the FM/AM Preset buttons 4. When this button is pressed, the indicator lights for about 5 seconds. While the indicator is lit, press one of the Preset buttons to store a station in the memory. The indicator above the pressed Preset button will light up and the Memory indicator will go out to indicate that memory operation has been completed.

6 Auto/Manual Tuning Mode Button and Indicator (TUNING MODE)

The tuning mode is alternately switched between auto and manual each time this button is pressed. The mode currently selected is shown by the tuning mode indicator.

7 Tuning Selectors (TUNING)

Press the UP selector to raise the tuned frequency and the DOWN selector to lower the tuned frequency.

- **Using the Tuning Selectors (Manual Mode)**
  First, set the Auto/Manual tuning mode button 6 to the manual tuning mode. Now, when the UP or DOWN tuning selector is held down, the tuned frequency will increase or decrease continuously. To tune in a station, press either the UP or DOWN tuning selector until you are near the frequency of the desired station. Then, after releasing the tuning selector, press again to change the frequency in single steps until the desired station is precisely tuned. Pressing once changes the frequency by 200kHz (or 50kHz) steps in the FM band and by 10kHz (or 9kHz) steps in the AM band.

- **Using the Tuning Selectors (Auto Mode)**
  Set the Auto/Manual tuning mode button 6 to the auto tuning mode. Then press the UP or DOWN tuning selector, there is no need to keep the selector depressed as in the manual tuning mode. The tuned frequency will continue to increase or decrease until a broadcast of sufficient strength is reached. To move on to the next broadcast, press the UP or DOWN tuning selector again. When the upper or lower end of the frequency range is reached, the displayed frequency will automatically switch back to the other end of the range and continue to increase or decrease as before. For example, when the DOWN tuning selector is pressed, the frequency will decrease until the lowest frequency is reached. The displayed frequency will then switch back to the highest frequency and continue to decrease as before.

  Scanning will not stop for broadcasts weak enough to be suppressed by the muting circuit. To receive a weak FM broadcast, set the FM Mute/MODE switch 12 to the OFF/MONO position and tune in the FM broadcast using the manual tuning mode.

8 FM/AM Selector Buttons and Indicators (FM/AM (MW))

Depress one of these buttons to select the band of the broadcast to be tuned using the tuning selectors 7 or to place a station in the memory using the Preset buttons.

9 Bass Control (BASS)

Adjust to strengthen or weaken bass response.

10 Treble Control (TREBLE)

Adjust to strengthen or weaken treble response.

1 Power Switch (POWER)

Press once to turn power on and once again to turn power off. When power is turned on, the Volume indicator lights and the TX-84/82 will turn on. If this switch is not ON, then this TX-84/82 will not go on even if the remote control transmitter's power key 29 is ON. With the remote control transmitter's power key OFF, turning power switch 1 to ON will turn on the TX-84/82. When the remote control transmitter's power key 29 is turned OFF while power switch 1 is ON, the STAND-BY indicator 22 will light.

2 Input Selector Buttons and Indicators

- **Audio Selectors**
  TUNER: Press to listen to an AM or FM broadcast.
  PHONO: Press to listen to a turntable.
  CD: Press to listen to a CD player.

- **Video Selectors (Controls audio and video signals)**
  VCR-1/VDP: Press to obtain the video and audio signals from a VCR-1 or a VDP.
  VCR-2: Press to obtain the video and audio signals from a VCR-2.

  The button is also enabled by key 33 of the remote control transmitter.

3 Tape Monitor Buttons and Indicators

These buttons permit two different tape decks to be used for recording, playback and dubbing. Press once to turn on and once again to turn off. Note that dubbing can only be performed from tape deck 1 to tape deck 2.

The button is also enabled by key 33 of the remote control transmitter.

4 FM/AM Preset Buttons and Indicators (FM/AM RANDOM PRESET STATION)

Use these buttons to recall an FM or AM station or to store a station in the memory. The preset indicator will light to show which button has been used. Refer to the Memory Function section for details.

[11] **Simulated Stereo (SIMULATED STEREO)**
Set this switch to the on position to add a stereo-like effect to monaural sources (TV programs, mono VCR recording, AM radio, etc.).

[12] **FM Mute/Mode Switch (FM MUTE/MODE)**
ON (STEREO): Normal stereo reproduction; monaural broadcasts will be heard in mono. Weak FM broadcasts will not be heard because of the muting circuit.
OFF (MONO): Both stereo and mono broadcasts will be heard in mono. During FM stereo reception, the Stereo indicator will not light. Weak FM broadcasts will be heard in mono.

* This switch can also be used to switch between stereo and mono reproduction of other sources.

[13] **Balance Control (BALANCE)**
Use this control to adjust the relative volume levels of the left and right speaker systems.

[14] **Volume control and Indicator (VOLUME)**
Turn clockwise to increase the volume level. The volume can be adjusted manually and by the remote control transmitter's Vlume UP/DOWN key [36]. When adjusted by remote control, the volume knob rotates along with the volume indicator on the knob. This allows you to see the volume level from a distance.

[15] **Stereo Image Expander Switch and Level Control and Indicator (TX-84 only)**
S.I.E (STEREO IMAGE EXPANDER)
Set this switch to the on position to add an extra feeling of width and depth to stereo sound. Adjust level control to raise and lower the amount of the stereo image expander effect.

[16] **Selective Tone Control Switch and Level Control and Indicator S.T.C (SELECTIVE TONE CONTROL)**
Set this switch to the on position, creating a clear reproduction quality of the ultra low frequencies and high frequencies. Boosting of a selective tone can be controlled via the level control.

[17] **Dynamic Bass Expander Switch and Level Control and Indicator (TX-84 only)**
D.B.E (DYNAMIC BASS EXPANDER)
Set this switch to the on position to add an extra feeling of power and realism to the low range. Its function is unlike that of the conventional bass control. Adjust level control to raise and lower the amount of the dynamic bass expander effect.

[18] **Shift Button and Indicator (SHIFT)**
The FM/AM preset buttons [4] can be used to store a total of 16 radio stations. Use this button to switch the preset buttons between the memory channel 1-8 and 9-16 modes. The setting alternates between 1-8 and 9-16 each time this button is pressed.

[19] **Frequency Display**
The frequency recalled by the FM/AM preset buttons [4] or tuned by the Tuning selectors [7] is displayed here in digital form.

[20] **APR Indicators**
Automatic Precision Reception System (FM Mode)
The APR system responses to FM reception fluctuations minimizing the distortion and noise.

NOTE:
- When FM Mute/Mode Switch [12] is OFF (MONO), the APR mode selection function does not operate, and the Stereo/Mode Indicator is forced to "MONO".
- The NR indicator is only on the TX-84.
- The RF MODE will indicate LOCAL when sufficient antenna is received.

[21] **Remote Control Sensor**
This sensor receives the remote control signals.

[22] **Stand-By Received Indicator**
When this indicator is on, power ON can be performed by the remote control transmitter. The signal received from the remote control transmitter will also turn the indicator ON. Refer to the Remote Control Transmitter Control's section for details.

[23] **Muting Indicator**
Muting can be performed by the remote control transmitter Audio Muting key [31]. When muting is ON, this indicator will light.

[24] **Speaker Selector Switches (SPEAKERS)**
This unit can drive two pairs of speakers in pairs (A or B) or fours (A + B). To listen to both Speaker Systems at once, depress both Speaker Selector switches.

[25] **Headphones Jack (PHONES)**
Stereo headphones with a standard binaural plug can be connected here.

[26] **Signal Strength Indicator (TX-84 only) (SIGNAL)**
The optimum tuning point is indicated when the most lamps are lit.

[27] **Tuned Indicator (TX-82 only) (TUNED)**
This lights when an FM or AM broadcast is being properly received. This indicator does not light for weak broadcasts.

[28] **Stereo Indicator (STEREO)**
This indicator lights when an FM stereo broadcast is being received. It does not light when the FM MUTE/Mode switch [12] is in the OFF (MONO) position or when a weak FM stereo broadcast is being received.

- **Remote Control Transmitter Controls (RC-84S, RC-82S)**

NOTE:
For the RC-AV1M transmitter provided with the TX-84M/82M, —please refer to the separate instruction manual (included).

The remote control transmitter included with this unit controls not only the amplifier and tuner functions of the TX-84/82, but also major functions of the cassette deck (only tape 1), compact disc player and turntable (TX-84 only) connected to the TX-84/82.

The remote control transmitter also has a switch that turns power on and off to the AC outlet on the rear panel of the TX-84.

If the main power switch [1] is not ON, remote control operation is not possible.

Power Key
When the TX-84/82's STAND-BY indicator is lit, pressing this key will turn on the TX-84/82's (the STAND-BY indicator will go out). Pressing the key again will turn off the TX-84/82 (the STAND-BY Indicator will light).

30 **Tape Operation Keys (TAPE)**
These keys are used to operate the tape deck connected to the rear panel tape jacks. Compatible Onkyo cassette decks are listed in the tape deck section of the connections explanation. Consult your Onkyo dealer for further details.

- **II** PAUSE: Press to activate the pause mode.
- ▶ PLAY: Press to begin playback.
- ● REC: While holding this key down, press the play key to start recording. Recording is not started when the rec key alone is pressed.
- ■ STOP: Press to stop recording, playback, rewind or fast forward.
- ◄◄ : Press to rewind.
- ►► : Press to fast-forward.

Refer to the cassette deck instruction manual for additional instructions on operating the deck.

31 **Audio Muting Key**
Pressing this key will operate the TX-84/82's audio muting circuit (approx. −20 dB). Muting indicator 23 will light. Pressing the key again will turn off audio muting. Audio muting is off whenever the TX-84/82 is turned on.

32 **Phono Operation Key (PLAY/REJECT) (RC-84S only)**
This key is used to operate the turntable connected to the rear panel phono jacks. Compatible Onkyo turntables are listed in the turntable section of the connections explanation. Consult your Onkyo dealer for further details. The phono operation key can be used only when the PHONO input selector key 2 has been pressed. Each time the phono operation key is pressed, the remote control transmitter alternately emits the play or reject command. Refer to the turntable instruction manual for additional instructions on operating the turntable.

NOTE:

Before starting record play using remote control, confirm that there is a record on the platter. If there is no record, the stylus will be lowered to the platter, resulting in serious damage to the stylus.

33 **Tape Monitor Keys and Input Selector Keys (INPUT SELECTOR)**
Select a desired program source: TAPE-1, TAPE-2, Phono, CD, Tuner, VCR-1/VDP, or VCR-2, using these keys.

34 **Tuner Operation Keys (DOWN-PRESET, UP)**
When the UP or DOWN remote this key is pressed, the next higher or lower memory channel is recalled. Each time UP or DOWN key is pressed, the following memory channel in the corresponding direction is recalled. If the key (UP or DOWN) is held down for more than one second, the memory channel will increase or decrease continuously until key is released.

35 **CD Operation Keys (CD)**
These keys are used to operate the Onkyo CD player. Compatible Onkyo CD players are listed in the CD player section of the connections explanation. Consult your Onkyo dealer for further details.

- **II** PAUSE: Press to activate the Pause mode.
- ▶ PLAY: Press to begin playback.
- ■ STOP: Press to stop playback.
- ◄◄ : Press this key to play soundtracks before the one being played.
- ►►I : Press this key to play soundtracks after the one being played.

Refer to the CD Player instruction manual for additional instruction to operate the CD player.

36 **Volume Keys (DOWN-UP)**
This key has the same function as that of the volume control 14. The volume level can be adjusted by pressing the UP or DOWN key, with the volume control knob rotating simultaneously.

OPERATIONS

NOTE:

- Before turning power on, confirm that all connections have been made properly.
- At power switch 1 on, the selector will be set to TUNER, the tape monitor to OFF, and the audio muting to OFF.
- For remote control operation, refer to the remote control section.

FM Reception (Manual Mode)
1. Press the TUNER Input Selector button 2 and the FM Selector button 8.
2. Confirm that both Tape Monitor buttons 3 are off (both indicators are off).
3. Set the tuning mode button 6 to the MANUAL mode.
4. To tune in an FM station not stored in the memory, press the UP or DOWN Tuning selector 7. First hold the selector down until the frequency display approaches the frequency of the desired station. Then release the Tuning selector and press it again in single steps until the desired frequency is tuned precisely. Note that the frequency is changed in 200kHz (or 50kHz) steps when either Tuning selector is pressed in single steps.
5. To recall a station stored in the memory, simply press the Preset station button 4 corresponding to the desired station. Be sure to set the memory Shift button 18 to the mode (1-8 or 9-16) for the memory channel to the recalled. Since this is a random FM/AM memory, an AM station will be tuned in if you recall a memory channel in which an AM station is stored.
6. The Stereo program indicator 28 will light up if the broadcast is being received in stereo. The Stereo indicator will not light up if the broadcast is monaural or too weak to be received in stereo.

FM Reception (Auto Mode)
1. Press the TUNER Input Selector button 2 and the FM Selector button 8.
2. Set the tuning mode button 6 to the AUTO mode and confirm that both Tape Monitor buttons 3 are off.
3. Press the UP or DOWN Tuning selector 7. The tuned frequency will continue to increase or decrease until a sufficiently strong broadcast is reached. To move on to

the next broadcast, press either Tuning selector again depending on the direction in which you want to go.
4. To stop scanning during automatic tuning, press the tuning mode button ⑥ to return to the manual mode. The frequency display will immediately stop increasing or decreasing.

AM Reception (Manual Mode)

1. Press the TUNER Input Selector button ② and the AM Selector button ⑧.
2. Set the tuning mode button ⑥ to the MANUAL mode and confirm that both Tape Monitor buttons ③ are off.
3. To tune in an AM station not stored in the memory, press the UP or DOWN Tuning selector ⑦ in the manner described above. Note that the frequency is changed in 10kHz (or 9kHz) steps when either Tuning selector is pressed in single steps.
4. To recall a station stored in the memory, simply Press the Press button ④ corresponding to the desired station. Since this is a random memory, an FM station will be recalled if you press a Preset key where an FM staion is stored.

AM Reception (Auto Mode)

1. Press the TUNER Input Selector button ② and the AM Selector button ⑧.
2. Set the tuning mode button ⑥ to the AUTO mode and confirm that both Tape Monitor buttons ③ are off.
3. Press the UP or DOWN Tuning selector ⑦. The tuned frequency will continue to increase or decrease until a sufficiently strong broadcast is reached. To move on to the next broadcast, press either Tuning selector again depending on the direction in which you want to go.
4. To stop scanning during automatic tuning, press the tuning mode button ⑥. The frequency display will immediately stop increasing or decreasing.

Memory Function

This unit can store a total of 16 FM and AM stations in the memory for instant recall at any time without using the Tuning selector. The stations can be any combination of FM and AM broadcasts. Read the following directions carefully to avoid mistaken operations.
1. Confirm that both Tape Monitor buttons ③ are off, press the TUNER Input Selector button ②, press the FM/AM Selector button ⑧ of the band of the station to be placed in the memory and set the Shift button ⑱ to the 1-8 or 9-16 range, depending on which memory channel is to be used.
2. Tune in the broadcast to be placed in the memory using the Tuning selector ⑦.
3. Depress the Memory button ⑤ and, while the Memory indicator remains lit (about 5 seconds), depress one of the Preset buttons ④.
4. When the Preset button is depressed, the Memory indicator will go out and the indicator of the depressed preset button will light. The frequency currently shown in the frequency display is now stored in the memory.
5. If the Memory indicator goes out before you have depressed one of the Preset buttons, simply press the Memory button ⑤ again to give yourself another 5 seconds.
6. Placing another broadcast in the same memory channel automatically cancels the station previously stored in that channel.

Notes

Preset frequencies can be transferred to other channels. For example, the FM station stored on Preset button number 6 can be transferred to Preset button number 1 in the following manner:
1) Press the FM Selector button ⑧.
2) Press Preset button number 6
3) Press the Memory button ⑤. (The Memory indicator lights.)
4) Press Preset button number 1.
5) The same station is now stored on both preset buttons 1 and 6.

Memory Preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves the contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in and the Power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory, the Power switch must be turned on and off a few times each month to keep the back-up system operative.
The memory preservation period after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of a few weeks after the last time power has been turned off. This period is shorter when the unit is exposed to high humid climate.

Phonograph Record

1. Connect the turntable to the PHONO inputs and connect the phono ground wire to the ground terminal.
2. Press the PHONO Input Selector button ②, and confirm that the both Tape Monitor buttons ③ are off.
3. Follow turntable operating instructions.

Compact Disc Player

1. Connect the CD player to the CD inputs.
2. Press the CD Input Selector button ②, and confirm that the both Tape Monitor button ③ are off.
3. Follow the operating instructions for the CD player.

Tape Playback

1. Connect the output leads from the tape deck to the TAPE-1 or 2 PLAY inputs.
2. Press the TAPE-1 or TAPE-2 Monitor button ③ depending on which pair of TAPE PLAY inputs the deck is connected to.
3. Follow tape deck operating instructions for playback.

Tape Recording

1. Make all connections between the tape deck and the unit as shown in the System Connections diagram.
2. Radio: Press the TUNER Input Selector button ②, and set the FM/AM Selector button ⑧ to FM or AM.
   Records: Press the PHONO Input Selector button ②.
   CD: Press the CD Input Selector button ②.
   VCR-1/VDP: Press VCR-1/VDP Input Selector button ②.
   VCR-2: Press the VCR-2 Input Selector button ②.
3. Put the tape deck in the recording mode. The recording can be monitored through the speakers or headphones as desired. Turn on the corresponding Tape Monitor button to hear the signal that, having been recorded is returned from the tape deck to the TX-84/82 (Monitoring is only possible if the tape deck has three heads.)
4. Set the proper recording level using the controls on the tape deck used for recording. Also, during recording and dubbing operations, never change the positions of any controls (bass, treble, etc.) on this unit.

Tape-to-Tape Dubbing

1. Connect the two tape decks to this unit as shown in the System Connections diagram.
2. Load the original tape in tape deck 1 and the blank tape in tape deck 2.
3. Press the TAPE-1 Monitor button ③ (indicator light).
4. Put tape deck 1 in the playback mode and tape deck 2 in the recording mode. Follow tape deck operating instructions.
5. The recording can be monitored through the speakers or headphones. If tape deck 2 has three heads, the just-recorded signal can be monitored.

Graphic Equalizer

1. Connect the graphic equalizer to the TAPE-2 jacks.
2. If a second tape deck is used, connect it to the tape jacks on the graphic equalizer.
3. Press the TAPE-2 Monitor button ③.
4. Follow the graphic equalizer operating instructions.
5. To record an equalized signal, use tape deck 2 (connected to the equalizer) for recording.

Video Disc Player Playback

1. Connect the video disc player to the TX-84/82 as shown in the System connections diagram. Then connect a monitor or TV having a video input jack to the TX-84/82 video "MONITOR OUT"jack.
2. Press the VCR-1/VDP Input Selector button ②.
3. Switch on the monitor TV, and start playback of the video disc player. The picture will be sent to the monitor TV and sound to the speakers connected to the TX-84/82.
4. Refer to the video disc player instruction manual for additional information.

Video Cassette Recorder (or Player) Playback

1. This unit has facilities for two video cassette recorders. Connect the VCR to the TX-84/82 as shown in the System Connections diagram. Note that a playback only video unit has no video or audio input jacks. Remember to switch the coresponding VCR mode switch to MONO when using a monaural VCR-2. If this is not done, sound will be heard from only one speaker. If the MONO setting is used with a hi-fi (stereo) VCR, even stereo sound will be heard in the monaural mode. Then connect a monitor or TV having a video input jack to the TX-84/82 video "MONITOR OUT" jack.
2. Press the VCR-2 Input Selector button ②.
3. Switch on the monitor TV, and start playback of the VCR. The picture will be sent to the monitor TV and sound to the speakers connected to the TX-84/82.
4. Refer to the video cassette recorder instruction manual for additional information.

In case of VCR-2
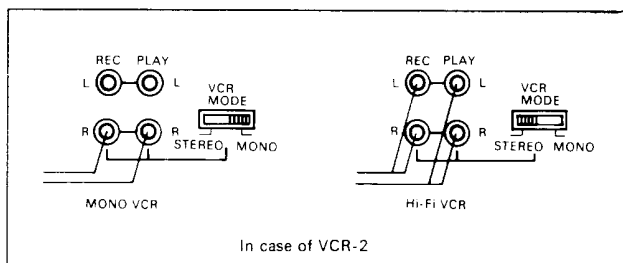
Video Disc Player to VCR Dubbing

Video disc programs can be recorded onto a VCR-2.

1. Load a disc in the video disc player, and a blank tape in the VCR-2.
2. Press the VCR-1/VDP Input Selector button ②.

3. Begin playback of the video disc player and recording of the VCR-2.
4. The VCR-1/VDP to VCR-2 duplication is possible when a second VCR output are connected to the VCR-1/VDP terminals.
5. Refer to the video disc player and VCR instruction manuals for additional information.

Using the Remote Control Transmitter (RC-82S, RC-84S)
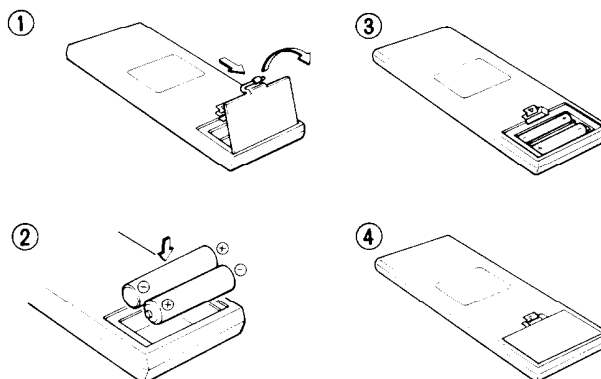
● **Batteries**

The remote control transmitter is powered by two batteries. Before using this unit for the first time, insert the two batteries (included) as shown in the diagram. The remote control transmitter has no on/off switch. Average battery life is one year. This period may be shorter depending on the frequency of use and environment (temperature and humidity) in which the remote control transmitter is used. If the remote control transmitter does not operate even though front panel controls function normally, the batteries should be replaced. Use only batteries listed in the following chart.

Type	Voltage	Size
Manganese	1.5V	AA R6 UM-3

Note

1. Do not leave an expired battery in the case as it may leak or damage the battery case.
2. When inserting the batteries, be sure the (+) and (–) ends are properly aligned.
3. Do not use nickel-cadmium (rechargeable) batteries.
4. Do not use one specified (manganese) battery and one alkaline battery at the same time.
5. Replace both batteries at once; do not use one old and one new battery together.

Transmitter Battery Replacement

● Precautions

1. Remove the batteries if the remote control transmitter is not going to be used for a long time.
2. This unit uses infrared rays. Therefore, commands may not be received properly if the front panel of the TX-84/82 is exposed to bright light. To prevent this from occurring, place the TX-84/82 so that it is not directly exposed to a bright light.

3. The batteries of the remote control transmitter must be replaced periodically. Remember, however, that commands will be received only when the main power switch of the TX-84/82 is on.
4. The transmitter operates up to a distance of about five meters (16 feet). the transmitting window must always be pointed at the reception window when a command is sent to the receiver.
5. If the TX-84/82 is placed inside an audio rack behind a glass door, the door should not use colored glass or have any decorations on it since this could shorten the range or prevent commands from being received.
6. Use of other infrared remote control devices in the same room may cause interference.
7. If this remote control transmitter does not operate properly, confirm that the batteries are not dead. If the problem persists, contact your Onkyo dealer.

● Operation
1. Turn the TX-84/82 power switch ① ON.
2. Pressing the power key ㉙ of the remote control transmitter when the TX-84/82 is turned ON will set the TX-84/82 in the stand-by mode and light the stand-by indicator. Pressing the power key ㉙ again will turn the TX-84/82 ON and the stand-by indicator goes off.
3. The volume (up/down) ㊱, Audio Muting ㉛, input selectors (TUNER, PHONO, CD, VCR-1/VDP, VCR-2), and Tape Monitor (TAPE-1, TAPE-2) ㉝, and Tuner (Preset up/down) ㉞ keys are used in the same manner as the corresponding front panel controls.

● Tape Operation (‖ PAUSE/ ▶ PLAY / ● REC/ ■ STOP/ ◄◄ / ▶▶) ㉚
These keys are used to control a remote control compatible cassette tape deck connected to the rear panel of the TX-84/82 as shown in the system connections diagram.

   ■ STOP: Press to stop playback or recording.
   ◄◄ : Press to wind the tape rapidly backward.
   ▶ PLAY: Press to start playback.
   ▶▶ : Press to wind the tape rapidly forward.
   ● REC: While holding this key down, press the play key to start recording. Recording will not start if the REC button is pressed after the PLAY button. The PLAY button should be pressed less than one second after the REC button to start recording.
   ‖ PAUSE: Press to temporarily halt tape travel. To put the deck in the REC/PAUSE mode, first press the REC button and then the PAUSE button immediately afterward (within one second).

The basic function of all tape operation buttons is the same as the corresponding front panel controls on the deck. Refer to the deck instruction manual for additional information.

● Phono Operation (PLAY/REJECT) (RC-84S only)
This key is used to control a remote control compatible turntable connected to the rear panel of the TX-84 as shown in the system connections diagram. This key can be used only when the PHONO input selector key ㉝ or ② has been pressed. The function of the PLAY/REJECT key alternates between play (start) and reject (stop) each time this key is pressed. Refer to the turntable instruction manual for additional information.

● CD Operation (‖ PAUSE/ ▶ PLAY/ ■ STOP/ ◄◄ / ▶▶) ㉟

‖ **PAUSE:**
Press this key to briefly interrupt disc play. If this key is pressed while a track is being accessed after pressing the UP or DOWN key the player will switch to the pause mode after the pickup has moved to the specified track, index or point. To resume disc play, press the PLAY key.

▶ **PLAY:**
Press this key to begin disc play.

■ **STOP:**
Press this key to stop disc play.

◄◄ :
Press during disc play to return to the beginning of the current tack. Press twice to return to the beginning of the previous track, three times for the track before that, and so on.

▶▶ :
Press during disc play to advance to the beginning of one of the following tracks. The number of times this key is pressed determined how many tracks are skipper.

Refer to the CD player instruction manual for additional information.

Note:
● Point the remote control transmitter in the direction of the CD player when using it. The distance of use of the transmitter may be different for TX-84/82 and the CD player.
● Connect the 2.5mm plug cord, that is provided for the remote control operation of the DX-130, to the CD remote control jack on the rear panel of the TX-84/82 and DX-130. The DX-130 is remote-controlled by the control signal s received on the Remote Control Sensor of the TX-84/82.

WORLDWIDE MODELS
● **Voltage Selector (Rear Panel)**
Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch.with a screwdriver to the up or down. Confirm that the switch has been moved all the way to the up or down before turning the power switch on. Models without a voltage selector can only be used in areas where the power supply is the same as that of the unit.
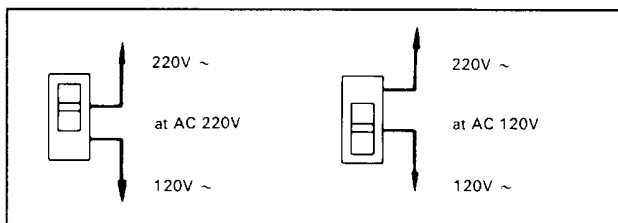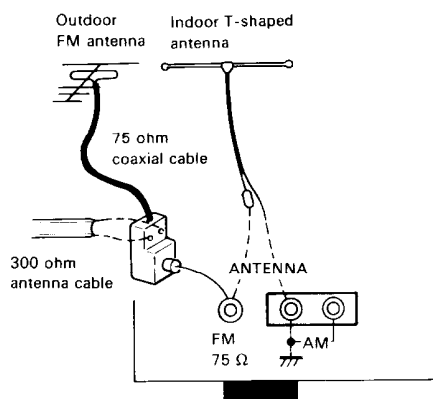

● **Tuning Step Frequency Switch (Bottom)**
Worldwide models are equipped with a switch that controls the AM (9kHz/10kHz) and FM (50kHz/200kHz) band tuning steps.
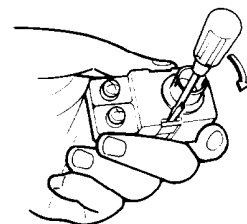Be sure to set this switch to match the tuning step frequency in your area.

U.S.A	10kHz/200kHz
Other area	9kHz/50kHz

● FM Antennas

Outdoor FM antenna | Indoor T-shaped antenna
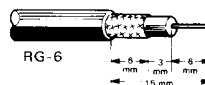
75 ohm coaxial cable
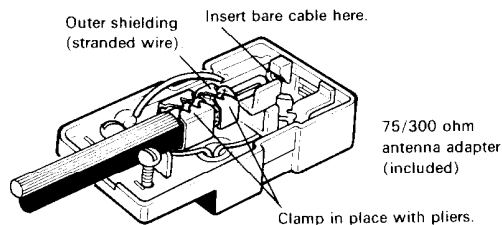
300 ohm antenna cable

ANTENNA

FM 75 Ω | AM

(1) Use a small screwdriver to open the adapter as shown in the diagram. Be careful not to remove the shielding case inside the plug cover.

(2) Prepare the coaxial cable as shown below.

RG-6 — 6 mm — 3 mm — 6 mm — ◄— 15 mm —►

(3) Connect the 75/300 ohm antenna adapter to the coaxial cable.

Outer shielding (stranded wire) | Insert bare cable here.

75/300 ohm antenna adapter (included)

Clamp in place with pliers.

TROUBLE SHOOTING Guide

NOTE:

If a problem occurs, first operate the unit using the front panel controls to confirm that it is not due to a malfunction (or worn out batteries) of the remote control transmitter.

Trouble	Cause	Remedy
No power.	● AC fuse blown.	● Contact Onkyo dealer.
Power but no sound.	● Tape monitor switch on. ● Bad connections. ● Amplifier protection circuitry has been activated.	● Switch to off. ● Check input leads, speaker leads, pin plugs, etc. ● Contact Onkyo dealer.
Hum, low frequency noise.	● Poor or no input ground. ● Poor or no phono motor ground.	● Check outer conductor of input plugs. ● Check for proper ground connection.
Howling when the volume is turned up.	● Turntable and speakers are too close together.	● Move them farther apart.
Rough or scratchy sound. High range is not clear.	● Stylus of pick-up is worn. ● Stylus tip is dirty. ● Treble control too high.	● Replace. ● Clean. ● Turn treble control down.
Buzzing noise on AM (particularly conspicuous at night or with weak stations).	● Noise from electrical apparatus such as fluorescent lamp.	● Move unit to different position. ● Set up outdoor AM antenna.
High pitched noise or buzzing noise on TV.	● Noise from TV.	● Place the AM loop antenna as far as possible from the TV. ● Move unit away from TV set.
Crackling noise on AM and FM.	● Noise caused by turning fluorescent lamp on and off. ● Noise from automobile ignition.	● Move antenna as far as possible from the fluorescent lamp. ● Install and FM outdoor antenna as far as possible from the road. ● Change the position or direction of the outdoor antenna.
FM Signal Strength (TX-84 only) Indicators and stereo indicator light but sound is distorted and separation is bad.	● Station is too strong. ● Multiple reflection of the radio waves because of tall buildings or mountains.	● Change to T-shaped antenna. ● Use antenna which has better directivity and select a point where the distortion is least.
FM Signal Strength (TX-84 only) Indicators and stereo indicator flicker and hiss is heard on FM.	● Station is too weak. ● Stereo FM broadcasts cover only about half the distance of an ordinary broadcast.	● Install an outdoor FM antenna. ● Change the position or direction of the outdoor antenna.
No station is recalled when a preset key is pressed.	● The power switch has not been turned on for a long time or the power cord has been unplugged for a long time.	● The memory contents are lost if the power switch is not turned on a few times each month. Store all stations again and remember to turn the power on a few times each month.
Front panel controls function but remote controller does not.	● No batteries in remote control transmitter. ● Batteries have worn out.	● Insert batteries. ● Replace batteries.

The tuning steps by which the tuned frequency changes on each band have been set at the factory to the proper value for the country where each unit is to be sold. If you use the unit in a country where a different tuning step is required or if the broadcast frequencies in your country change so that you can not tune in radio stations precisely, take this unit to an authorized Onkyo Service Center.

SPECIFICATIONS

AMPLIFIER SECTION	TX-84	TX-82
Power Output:	60 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz, with no more than 0.04% THD.	45 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz, with no more than 0.08% THD.
Total Harmonic Distortion:	0.04% at rated power	0.08% at rated power
IM Distortion:	0.04% at rated power	0.08% at rated power
Damping Factor:	35 at 8 ohms	35 at 8 ohms
Frequency Response:	20 – 30,000 Hz ± 1dB	20 – 30,000 Hz ± 1dB
RIAA Deviation:	20 – 20,000 Hz ± 0.8dB	20 – 20,000 Hz ± 0.8dB
Sensitivity and Impedance:	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/3.5 kohms	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms Tape Rec: 150mV/3.5 kohms
Phono Overload:	120mV RMS at 1kHz, 0.04% THD	120mV RMS at 1kHz, 0.08% THD
Signal-to-Noise Ratio:	Phono: 85dB (at 10mV input, A weighted) 75dB (IHF A-202) CD/Tape: 95dB (A weighted) 80dB (IHF A-202)	Phono: 85dB (at 10mV input, A weighted) 75dB (IHF A-202) CD/Tape: 95dB (A weighted) 80dB (IHF A-202)
Tone Controls:	Bass: ± 10dB at 100Hz Treble: ± 10dB at 10kHz	Bass: ± 10dB at 100Hz Treble: ± 10dB at 10kHz
Muting:	20dB	−20dB

TUNER SECTION FM:	TX-84	TX-82
Tuning Range:	87.9 – 107.9MHz (200kHz steps) and/or 87.5 – 108.0MHz (50kHz steps)	87.9 – 107.9MHz (200kHz steps) and/or 87.5 – 108.0MHz (50kHz steps)
Usable Sensitivity:	Mono: 10.8dBf, 1.9µV Stereo: 17.2dBf, 4.0µV	Mono: 11.2dBf, 2.0µV Stereo: 17.2dBf, 4.0µV
50dB Quieting Sensitivity:	Mono: 17.2dBf, 4.0µV Stereo: 37.2dBf, 40µV	Mono: 17.2dBf, 4.0µV Stereo: 37.2dBf, 40µV
Capture Ratio:	1.5dB	1.5dB
Image Rejection Ratio:	40dB	40dB
IF Rejection Ratio:	90dB	90dB
Signal-to-Noise Ratio:	Mono: 73dB Stereo: 67dB	Mono: 72dB Stereo: 66dB
Alternate Channel Attenuation:	55dB	55dB
AM Suppression Ratio:	50dB	50dB
Harmonic Distortion:	Mono: 0.15% Stereo: 0.25%	Mono: 0.15% Stereo: 0.30%
Frequency Response:	30 – 15,000Hz ± 1.5dB	30 – 15,000Hz ± 1.5dB
Stereo Separation:	45dB at 1kHz / 30dB at 100 – 10,000Hz	45dB at 1kHz / 30dB at 100 – 10,000Hz
Muting Level:	17.2 dBf, 4µV	17.2dBf, 4µV

AM:	TX-84	TX-82
Tuning Range:	530 – 1620kHz (10kHz steps) and/or 522 – 1611kHz (9kHz steps)	530 – 1620kHz (10kHz steps) and/or 522 – 1611kHz (9kHz steps)
Usable Sensitivity:	30µV	30µV
Image Rejection Ratio:	40dB	40dB
IF Rejection Ratio:	40dB	40dB
Signal-to-Noise Ratio:	40dB	40dB
Harmonic Distortion:	0.7%	0.7%

GENERAL Power Supply:	TX-84	TX-82
USA & Canadian models:	AC120V, 60Hz	AC120V, 60Hz
World wide model:	120 and 220V switchable, 50/60Hz	120 and 220V switchable, 50/60Hz
Dimensions (W x H x D):	435 x 110 x 345 mm 17-1/8" x 4-3/8" x 13-1/2"	435 x 110 x 345 mm 17-1/8" x 4-3/8" x 13-1/2"
Weight:	8.5 kg., 18.8 lbs	7.5 kg., 16.5 lbs.

Remote Control transmitter RC-84S, RC-82S

Transmitter:	Infrared
Signal range:	Approx. 5 meters (16ft. 4")
Power supply:	Two "AA" batteries (1.5V x 2)
Dimenstions (W x H x D):	64 x 18 x 149 mm 2-1/2" x 11/16" x 5-7/8"
Weight:	110 grams 3.9 oz. (including batteries)

Specifications and features are subject to change without notice.